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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER PULLIAS, JESSE SCOTT				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/550,967

Applicant(s)

BARTOSIK ET AL.

Examiner

JESSE S. PULLIAS

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

1. This office action is in response to correspondence filed 04/13/09 regarding application 10/550967, in which claims 1-16 were amended, and new claim 17 was added. Claims 1-17 are currently pending in the application and have been considered.

Response to Arguments

2. The amendments to claims 6 and 8 overcome the prior objections for minor informalities, and so the objections are withdrawn.
3. The arguments on pages 6-11 of the Remarks have been considered but are moot in view of the new ground(s) of rejection, necessitated by amendment.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8, 13, 14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mishevich et al. (WO 01/31634) in view of Gould (5,794,189).

Consider claim 1, Mishevich discloses a speech recognition and correction system (**p1, lines 6-8**) comprising:

at least one speech recognition device (**p6, lines 14-20, Fig 4 Processor includes SR Engine and SR Interface**) configured to transcribe a spoken text into a recognized text, and

a correction device (**p15 lines 12-31, Fig 10 proofreading device**) configured to correct the recognized text, said correction device being connected to the at least one speech recognition device via a data network (**p13 lines 4-8 the Internet**) for the transmission of the recognized text and/or of the spoken text, wherein the correction device comprises a lexicon of alternatives (**p15 lines 21-22, list box 1012**), the lexicon of alternatives comprising a plurality of entries, at least some of which are displayed (**p15 lines 25-26, words are shown on the interface**) by the correction device as alternatives to individual words (**Fig 10**) of the recognized text.

Mishelevich does not specifically mention wherein at least some of the plurality of entries in the lexicon of alternatives are updated based on information about at least one previous correction made by the correction device.

Gould discloses at least some of a plurality of entries in a lexicon of alternatives (**Fig 1, entries in vocabulary 40 are alternatives because they are candidates to replace the misrecognized word**) are updated based on information about at least one previous correction made by a correction device (**Col 11 lines 21-26, training the speech model of the correctly recognized words against the speech frames of the original user utterance, which is part of the entry, see Fig 3, common voc. 48**).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Mishelevich such that wherein at least some of the

plurality of entries in the lexicon of alternatives are updated based on information about at least one previous correction made by the correction device, in order to selectively train the speech models (**Col 1 lines 36-37**), which one skilled in the art would have been familiar with as a common way to improve speech recognition accuracy.

Regarding independent claim 2, it is directed to the correction device of independent claim 1, and is rejected for the same reasons as claim 1.

Consider claim 7, Mishelevich discloses a computer implemented method of creating an entry in a lexicon of alternatives (**Fig 11, p16 lines 1-9**) used to correct recognized text transcribed from a spoken text by a speech recognition device, the method comprising examining at least one source of knowledge (**p 16 lines 2-9, Data is input, categorized voice recognition segments**) that is independent of the speech recognition device with respect to text elements, (**p16 lines 2-9, data is categorized according to text elements**) including words that can be confused with one another (**p16 lines 1-2**), and including the text elements that can be confused with one another as a list of alternatives in the entry of the list of alternatives (**p16 lines 1-2, p15 lines 21-22**, the confusable text elements are put together in a list (a data record entry) of alternatives).

Mishelevich does not specifically mention wherein the list of alternatives in the entry is based at least in part on at least one previous correction of the recognized text.

Gould discloses a list of alternatives (**Fig 1, entries in vocabulary 40** are

alternatives because they are candidates to replace the misrecognized word) is based at least in part on at least one previous correction of a recognized text. **(Col 11 lines 21-26**, training the speech model of the correctly recognized words against the speech frames of the original user utterance, which is part of the entry, see **Fig 3**, common voc. 48).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Mishelevich such that the list of alternatives in the entry is based at least in part on at least one previous correction of the recognized text, for reasons similar to those of claim 1.

Consider claim 3, Mishelevich discloses an analyzer configured to analyze **(Fig 4, Text Processor 424** is an analyzer since it processes text) selected text passages of the recognized text, by using character chain comparison **(Fig 9, step 910)** or syntactic analysis, and to determine alternatives to the selected text passages from the lexicon of alternatives **(Fig 9, step 910)**.

Regarding claim 4, Mishelevich discloses that the analyzer can be activated by a user of the correction device **(p14 lines 20-23**, the system is operated by a proofreader).

With respect to claim 5, Mishelevich further discloses the analyzer determines selected text passages from a cursor position or a marking information of a text

processing program (**p14, lines 4-6**).

Consider claim 6, Mishelevich discloses the analyzer determines selected text passages from a time position of the spoken text and its association with the recognized text (**p13 lines 20-24**).

Regarding claim 8, Mishelevich discloses determining text element replacements (**p15 lines 25-28**) made in a corrected text with respect to the original recognized text transcribed by the speech recognition device and recording the text element replacements as alternatives (**p16 lines 7-9**, the categorized voice-recognition segments contain the text element replacements and are stored, or recorded as alternatives) in the lexicon of alternatives (**p15 lines 21-22** the list is a series of data record entries).

Consider claims 13 and 14, Mishelevich discloses subdividing the plurality of entries according to speech, and according to technical field (**p16 lines 1-9**, the words are categorized into categories representing spoken sections during a medical procedure, which are technical fields).

Consider claim 17, Mishelevich discloses the at least one source of knowledge that is independent of the speech recognition device includes at least text files specific to the field of application (**Fig 12**).

6. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mishevich et al. (WO 01/31634) in view of in view of Gould (5,794,189), in further view of Ortega et al. (6,507,816).

Regarding claims 9 and 10, Mishevich discloses the feedback of each text element replacement is returned (**p15 lines 7-8**) and the retraining of the speech recognition software is carried out (**p15 lines 7-8**). Mishevich also discloses the speech recognition software causes alternatives to words to be displayed (**p14 lines 11-13**), and recording entries in the lexicon of alternatives (**p16 lines 7-9**, the categorized voice-recognition segments contain the text element replacements and are stored, or recorded as alternatives) thus suggesting, but not specifically teaching, that frequent element replacements are recorded as alternatives.

Mishevich and Gould do not specifically evaluating a frequency of each text element replacement examined in at least one source of knowledge, and recording the text element replacements as alternatives in the lexicon of alternatives only when a predetermined lower limit value of the frequency, expressed by an absolute number of the text element replacements or the number of the text element replacements with respect to the overall number of text elements examined or with respect to an overall occurrence of a given text element, is exceeded, or a predetermined upper limit is not reached.

Ortega discloses evaluating a frequency of each text element replacement examined in at least one source of knowledge (**Col 4 lines 30-41**, the user selects a

text string to replace an incorrect one, **Col 4 lines 44-47** the number of times (frequency) the corrected word (or text element replacement) is used is counted) and the use of a problem solving application to provide suggestions to the speaker (**Col 5 lines 20-22**) is only carried out when a predetermined lower limit value of the frequency, (**Col 5 lines 24-29**, the calculated accuracy ratio is equivalent to the inverse of the number of replacements ratio, therefore the acceptable minimum taught in line 24 is equivalent to a predetermined lower limit on replacements ratio exceeded) expressed by the absolute number of replacements or the ratio of replacements with respect to the overall number of words examined or with respect to the overall occurrence of a given word, is exceeded, and only when a predetermined upper limit value of the frequency, expressed by an absolute number of the text element replacements or a ratio of a number of the text element replacements with respect to an overall number of text elements examined, is not reached (**Col 5 lines 17-20**, e.g. when 100% is not reached).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Mishelevich and Gould by using the replacement frequency evaluations are taught by Ortega to determine when to add a word to the lexicon, in order to solve misrecognition problems as suggested by Ortega (**Col 2 lines 10-15**).

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mishelevich et al. (WO 01/31634) in view of Gould (5,794,189), in further view of Nassif et al. (6,418,410).

Consider claim 11, Mishelevich discloses the text element replacements (**p15 lines 25-28**) made in a corrected text with respect to the original recognized text transcribed by a speech recognition device are determined and recorded as alternatives (**p16 lines 7-9** the categorized voice-recognition segments contain the text element replacements and are stored, or recorded as alternatives) in data record entries of the lexicon of alternatives. (**p15 lines 21-22** the list is a series of data record entries)

Mishelevich and Gould do not specifically disclose analyzing the acoustic similarity of text elements and recording the text element replacements as alternatives in the lexicon of alternatives only when the text element replacements have a predetermined measure of phonetic similarity.

Nassif discloses analyzing the acoustic similarity of text elements (**Col 7 lines 2-5**, the audio of the text elements is compared) and the updating the language model (**Col 6 lines 45-50**) only when text elements have a predetermined measure of phonetic similarity (**Col 6 lines 51-58**, the method compares whether a predetermined statistical quality exists by comparing the phonetics).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Mishelevich and Gould by analyzing the acoustic similarity of text elements and recording the text element replacements as alternatives in the lexicon of alternatives only when the text element replacements have a predetermined measure of phonetic similarity, in order to continually improve accuracy, as suggested by Nassif (**Col 1 lines 32-37**).

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mishelevich et al. (WO 01/31634) in view of Gould (5,794,189), in further view of Chen et al. (5,864,805).

Regarding claim 12, Mishelevich discloses that the text element replacements **(p15 lines 25-28)** made in a corrected text with respect to the original recognized text transcribed by a speech recognition device are determined and recorded as alternatives **(p16 lines 7-9,** the categorized voice-recognition segments contain the text element replacements and are stored, or recorded as alternatives) in data record entries of the lexicon of alternatives **(p15 lines 21-22** the list is a series of data record entries).

Mishelevich and Gould do not specifically mention analyzing time positions of the text element replacements with respect to the spoken text and recording the text element replacements as alternatives in the lexicon of alternatives only when there is a corresponding text element in the spoken text that is similar in terms of time.

Chen discloses analyzing time positions of text elements with respect to spoken text **(Col 3 lines 11-20,** the start and end times of the word) and a candidate words list is derived only when there is a corresponding text element in the spoken text that is similar in terms of time **(Col 3 lines 21-23, Col 3 lines 32-39)**. Chen also teaches replaced text elements are chosen from the list of alternative words **(Col 4 lines 40-46)**.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Mishelevich and Gould analyzing time positions of the text element replacements with respect to the spoken text and recording the text

element replacements as alternatives in the lexicon of alternatives only when there is a corresponding text element in the spoken text that is similar in terms of time., in order to fix word boundaries problems as mentioned by Chen (**Col 1, lines 44-46**).

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mishelevich et al. (WO 01/31634) in view of Gould (5,794,189), in further view of Ortega et al. (6,332,122).

Regarding claim 15, Mishelevich discloses identifying the person recording the data and, in the physician example, this can be either the physician or another medical staff member such as a nurse (**p8 lines 29-30**).

Mishelevich and Gould do not specifically subdividing the plurality of entries according to author of the original spoken or corrected text.

Ortega discloses subdividing data record entries according to author of the original spoken or corrected text (**Abstract**, which transcribed text is associated with a speaker using a speaker ID).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Mishelevich and Gould by subdividing the plurality of entries according to author of the original spoken or corrected text, in order to overcome difficulties in identifying multiple users, as suggested by Ortega (**Col 1 lines 19-26**).

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Mishelevich et al. (WO 01/31634) in view of Gould (5,794,189), in further view of Rozak (5,950,160).

Consider claim 16, Mishelevich discloses the feedback from the proofreader in the form of the selection of particular options of text are used for training the speech recognition software, which generates the list of alternatives (**p15 lines 7-11**), but Mishelevich and Gould do not specifically teach that the list of alternatives is adapted online during the correction of recognized texts.

Rozak specifically teaches the list of alternatives is adapted online during the correction of recognized texts (**Col 5 lines 54-65**, the vocabulary, which overlaps the list of alternatives, has words added during correction, which makes it online).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Mishelevich and Gould to adapt the list of alternatives during correction as taught by Rozak, in order to improve efficiency, as suggested by Rozak (**Col 1 lines 20-22**).

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jesse Pullias whose telephone number is 571/270-5135. The examiner can normally be reached on M-F 9:00 AM - 4:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571/272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571/270-6135.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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/Jesse S. Pullias/

Examiner, Art Unit 2626

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Primary Examiner, Art Unit 2626

6/26/2009